

§ 23.16

(1) The occupied bandwidth of emission shall be confined within the least possible spectrum space consistent with the state of the art and the required quality of transmission, and in no event shall be more than the authorized bandwidth.

(2) Spurious emissions of transmitters of mean power of 50 kilowatts or less shall be attenuated at least 40 decibels below the mean power of the fundamental without exceeding the power of 50 milliwatts.

(3) Spurious emissions of transmitters of mean power exceeding 50 kilowatts shall be attenuated at least 60 decibels below the mean power of the fundamental and every effort should be made to keep the level of spurious emissions below the power of 50 milliwatts.

(b) For all transmitters placed into operation after September 19, 1973, and for all transmitters after September 19, 1975, which operate on frequencies above 30 MHz, the mean powers of emissions shall be attenuated below the mean output power of the transmitter in accordance with the following schedule:

(1) On any frequency removed from the assigned frequency by more than 50 percent up to and including 100 percent of the authorized bandwidth: At least 25 decibels;

(2) On any frequency removed from the assigned frequency by more than 100 percent up to and including 250 percent of the authorized bandwidth: at least 35 decibels;

(3) On any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth: at least 43 plus 10 log (mean output power in watts) decibels, or 80 decibels, whichever is the lesser attenuation.

(c) When an emission outside of the authorized bandwidth causes harmful interference, the Commission may, at its discretion, require greater attenuation than that specified in this section.

[38 FR 22479, Aug. 21, 1973; 38 FR 24901, Sept. 11, 1973]

§ 23.16 Frequency tolerances.

(a) The frequency tolerance for stations in the International Fixed Public

47 CFR Ch. I (10–1–98 Edition)

Radiocommunications Services shall be maintained as prescribed in the following table:

Frequency range	Tolerances applicable to new transmitters installed after September 19, 1973, and to all transmitters after September 19, 1975	
	Percent	Parts per million
10 to 50 kHz .....	.1	1000
50 to 535 kHz .....	.02	200
1605 to 30,000 kHz .....	.0015	15
30 to 50 MHz .....	.002	20
50 to 000 MHz .....	.0005	5
1000 to 1850 MHz .....	.001	10
1850 to 1990 MHz .....	.02	200
1990 to 2500 MHz .....	.001	10
2500 to 10,500 MHz .....	.03	300
10,500 to 40,000 MHz .....	.05	500

(b) Until September 19, 1975, the frequency tolerance of transmitters installed at stations in these services before September 19, 1973, and operating within the frequency bands set forth below, shall be maintained within the following limits:

Frequency range	Tolerance (percent)
10 to 50 kHz	0.1
50 to 535 kHz	0.02
1605 to 30000 kHz	0.003
Above 30 MHz	(¹)

¹ As set forth in the radio station license.

[38 FR 27386, Oct. 3, 1973]

§ 23.17 Frequency measurement.

Each station shall provide for the measurement of all frequencies assigned thereto, and establish a procedure for checking them regularly. These measurements shall be made by means independent of the frequency control of the transmitter and shall be of accuracy sufficient to detect deviation from the assigned frequency within one-half of the allowed tolerance. A record shall be kept of the results and dates of all frequency measurements.

[38 FR 22480, Aug. 21, 1973]

§ 23.18 Authorization of power.

(a) *Authorized power.* Power, when designated in the respective station license for a particular transmitter or transmitters, is peak envelope power for transmitters having full, unkeyed

carrier, single sideband or independent sideband emissions, and mean power for transmitters having other emissions, unless specifically expressed otherwise. Designation of effective radiated power may appear in the station license in addition to designation of power for a transmitter or transmitters, when deemed necessary by the Commission.

(b) *Use of minimum power.* In the interest of avoiding interference to other operations, all stations shall radiate only as much power as is necessary to ensure a satisfactory service.

[38 FR 22480, Aug. 21, 1973]

§ 23.19 Use of directional antennas.

Insofar as is practicable, directional antennas, of type consistent with the current state of art, shall be used on all circuits for both transmitting and receiving.

[38 FR 22480, Aug. 21, 1973]

§ 23.20 Assignment of frequencies.

(a) Only those frequencies which are in accordance with § 2.106 of this chapter may be authorized for use by stations in the Fixed Public and Fixed Public Press Services. Selection of specific frequencies within such bands shall be made by the applicants therefor. After an application has been filed with the Commission for a particular frequency, its availability for assignment as requested will be determined by a study of the probabilities of interference to and from existing services assigned on the same or adjacent frequencies and, if necessary, by coordination with other agencies utilizing frequencies in these ranges. The applicant will be notified of the results of such study and coordination. All new assignments of frequencies may be made subject to certain conditions as may be required to minimize the possibility of harmful interference to existing services.

(b) In order to minimize possible harmful interference at the National Radio Astronomy Observatory site located at Green Bank, Pocahontas County, West Virginia, and at the Naval Radio Research Observatory site at Sugar Grove, Pendleton County, West Virginia, any applicant for a sta-

tion authorization other than mobile, temporary base, temporary fixed, Personal Radio, Civil Air Patrol, or Amateur seeking a station license for a new station, a construction permit to construct a new station or to modify an existing station license in a manner which would change either the frequency, power, antenna height or directivity, or location of such a station within the area bounded by 39°15' N. on the north, 78°30' W. on the east, 37°30' N. on the south and 80°30' W. on the west shall, at the time of filing such application with the Commission, simultaneously notify the Director, National Radio Astronomy Observatory, P. O. Box No. 2, Green Bank, West Virginia, 24944, in writing, of the technical particulars of the proposed station. Such notification shall include the geographical coordinates of the antenna, antenna height, antenna directivity if any, proposed frequency, type of emission, and power. In addition, the applicant shall indicate in his application to the Commission the date notification was made to the Observatory. After receipt of such applications, the Commission will allow a period of twenty (20) days for comments or objections in response to the notifications indicated. If an objection to the proposed operation is received during the twenty day period from the National Radio Astronomy Observatory for itself or on behalf of the Naval Radio Research Observatory, the Commission will consider all aspects of the problem and take whatever action is deemed appropriate.

(c) [Reserved]

(d) Protection for Table Mountain Radio Receiving Zone, Boulder County, Colorado: Applicants for a station authorization to operate in the vicinity of Boulder County, Colorado under this part are advised to give due consideration, prior to filing applications, to the need to protect the Table Mountain Radio Receiving Zone from harmful interference. These are the research laboratories of the Department of Commerce, Boulder County, Colorado. To prevent degradation of the present ambient radio signal level at the site, the Department of Commerce seeks to ensure that the field strengths of any radiated signals (excluding reflected signals) received on this 728 hectare site